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|-----------------|-------------|----------------------|---------------------|------------------|
| 09/809,440      | 03/15/2001  | Gareth Hougham       |                     | 4926             |

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01/17/2007

EXAMINER

HUSON, MONICA ANNE

ART UNIT

PAPER NUMBER

1732

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 01/17/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

09/809,440

Applicant(s)

HOUGHAM, GARETH

Examiner

Monica A. Huson

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This office action is in response to the Amendment filed 16 October 2006. The rejection under 35 USC 112 has been overcome by applicant's amendment.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The rejections below first appeared in the paper mailed 3 May 2006.

Claims 1, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Everhart et al. (U.S. Patent 5,922,550), in view of Sangakoya (U.S. Patent 5,731,253), further in view of Franses et al. (U.S. Patent 4,743,507). Regarding Claim 1, Everhart et al., hereafter "Everhart," show that it is known to carry out a method consisting essentially of making a stamp for microcontact printing, said method substantially eliminating pattern distortion of said stamp formed as a result of the method (Column 9, lines 35-38), said method consisting essentially of inserting a blend of polysiloxane oligomer-siloxane monomer elastomer reactive mix into an enclosed mold (Column 9, lines 35-48), retaining said blend of polysiloxane oligomer-siloxane monomer reactive mix in said enclosed mold to maintain precise dimension during a two phase curing process comprising substantially curing and crosslinking said blend of polysiloxane oligomer-siloxane monomer reactive mix in said enclosed mold for a period of time at a substantially constant temperature to form an article, said constant curing temperature also being the end use temperature of

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a stamp to be formed from said article formed from said blend of polysiloxane oligomer-siloxane monomer reactive mix, wherein the pattern geometry of said article so formed is fixed at end use thermal conditions and is not distorted (Column 9, lines 48-49), followed by a subsequent cure of said substantially cured blend of polysiloxane oligomer-siloxane monomer reactive mix in said enclosed mold at a temperature of from between about 50C and 120C, which curing temperature is higher than said substantial end use temperature of said stamp to be formed from said article formed from said blend of polysiloxane oligomer-siloxane monomer reactive mix and is sufficient to provide required dimensional integrity for pattern faithfulness and said subsequent cure is sufficient to harden said elastomer reactive mix to a desired elastic modulus (Column 9, lines 49-50), said two phase curing in said enclosed mold preventing permanent shrinkage and maintaining precise dimensions of said stamp to be formed from said siloxane polymeric elastomer reactive mix (Column 10, lines 4-16); and removing said cured article formed from said blend of polysiloxane oligomer-siloxane monomer reactive mix from said enclosed mold after completion of said two phase curing process and forming a microcontact printing stamp therefrom, said microcontact printing stamp, as a result of said two phase curing steps in said enclosed mold having minimal pattern distortion, being a flexible and soft elastomeric stamp (Column 10, lines 4-24). Everhart shows the process as claimed as discussed above, but does not show using the specifically-claimed monomeric moieties. Sangokoya shows that it is known to use a siloxane system that contains moieties of hexamethylcyclotrisiloxane and hexamethyldisiloxane (Column 10, line 31). Sangokoya and Everhart are combinable because they are concerned with a similar technical field, namely, that of siloxane compounds and their applicability. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Sangokoya's specific siloxane system moiety as the elastomeric reactive material in Everhart's molding process in

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order to produce an article having characteristics of the molded moiety. Everhart does not show curing the polysiloxane oligomer-siloxane monomer reactive mix for a time in excess of one hour to about one week in a first of two curing phases. Franses et al., hereafter "Franses," show that it is known to carry out a method wherein a reactive mix is cured for a period of time ranging from in excess of one hour to about one week at a first temperature, followed by a subsequent cure at a higher temperature (Column 11, lines 1-7). Franses and Everhart are combinable because they are concerned with a similar technical field, namely, molding processes involving polydimethylsiloxane. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Franses' primary cure time during Everhart's curing process in order to produce an intermediate product having desirable characteristics that result from a specific cure time.

Regarding Claim 7, Everhart shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein dimensions contained on the stamp are microscopically small and registration of subsequent layers of such display is within microns over many inches (Column 10, lines 13-16), meeting applicant's claim.

Regarding Claim 8, Everhart shows the process as claimed as discussed in the rejection of Claim 1 above, including showing manufacturing a microelectronic pattern (Column 10, lines 25-34), meeting applicant's claim.

### ***Response to Arguments***

Applicant's arguments filed 16 October 2006 have been fully considered but they are not persuasive.

Applicant contends that Everhart is nonanalogous art relative to applicant's invention. In other words, applicant contends that although Everhart discloses microcontact printing, his stamp is different from that of the present invention. This is not persuasive because all that is claimed is a method for making a

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stamp for microcontact printing. The claim is written inclusively so that any stamp used for microcontact printing would be applicable to the present invention.

Applicant contends that Everhart does not disclose a two-phase curing system. This is not persuasive because Everhart clearly discusses curing at room temperature for a period of time, followed by curing at an elevated temperature for a period of time at Column 9, lines 48-49 and lines 50-51, respectively.

Applicant contends that Everhart does not show the claimed method of minimizing pattern distortion due to the two-step curing process. This is not persuasive, as the Examiner maintains that Everhart shows a two-step curing process which implicitly results in the same effect as that claimed by applicant.

Applicant contends that Everhart and Sangokoya are not properly combinable. This is not persuasive because Everhart teaches the use of siloxane compounds, and Sangokoya is cited only to show that it is known to use the particularly-claimed siloxane compound for shaping applications.

Applicant contends that Sangokoya does not show a two-step curing process. This is not persuasive because Sangokoya is not cited to teach this step.

Applicant contends that Everhart and Franses are not properly combinable. This is not persuasive because both references are concerned with shaping applications of polydimethylsiloxane. Franses was cited to show that it is known to cure the specific material for the claimed amount of time.

### **Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply


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is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A. Huson whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-4:00pm.

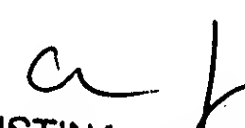
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Monica A Huson

January 8, 2007

  
CHRISTINA JOHNSON  
SUPERVISORY PATENT EXAMINER

4/8/07